

### Amendments to the Claims

1 1. (Currently Amended) A method of ablation laser-machining, comprising the steps of:  
2 generating pulses at a repetition rate of 0.1 to 50 MHz ~~by using~~ one or more  
3 semiconductor-chip laser diodes, ~~each a pulse member of the pulses~~  
4 having a pulse-duration of less than three picoseconds;  
5 directing a ~~less than 1 square mm~~ beam of the pulses ~~to toward~~ a work-piece, the  
6 beam having a spot area of less than one square millimeter at the surface  
7 of the work-piece and ~~with an~~ ablating pulse-energy-density; and  
8 scanning the beam ~~with~~ using a power-driven scanner to ablate a scanned area on  
9 the work-piece at least 25 times larger than the ~~beam area~~ spot area of the  
10 beam at the surface of the work-piece.

1 2. (Currently Amended) The method of claim 1, wherein the ablating pulse-energy-  
2 density is 0.1 to 20 Joules per /square centimeter.

1 3. (Currently Amended) The method of claim 1, wherein the scanned area on the work-  
2 piece is at least 100 times larger than the ~~beam area~~ spot area of the beam at the  
3 surface of the work-piece.

1 4. (Original) The method of claim 1, wherein the pulse-duration is 50 femtoseconds to 1  
2 picosecond.

1 5. (Currently Amended) The method of claim 1, wherein the beam area spot area of the  
2 beam at the surface of the work-piece is 1 to 2,500 square microns.

1 6. (Currently Amended) The method of claim 1, wherein the ablating pulse-energy-  
2 density is between 0.1 and 8 Joules/per square centimeter on the work-piece.

1 7. (Currently Amended) The method of claim 1, wherein the pulses are generated at 0.1  
2 to 50 MHz.

1 8. (Original) The method of claim 1, wherein the beam is scanned in one direction.

1 9. (Original) The method of claim 1, wherein the beam is scanned in two directions.

1 10. (Original) The method of claim 1, wherein the beam is scanned in a spiral.

1 11. (Currently Amended) A method of ablation laser-machining, comprising the steps of:  
2 generating ~~0.6 to 100 MHz~~ pulses at a repetition rate of 0.6 to 100 MHz, a  
3 duration of a member of the pulses being each pulse having a pulse-  
4 duration less than three picoseconds;  
5 directing a ~~less than 1 square mm~~ beam of the pulses toward a work-piece, the  
6 beam having a spot area at the surface of a work-piece of less than 1  
7 square millimeter to a work-piece with an ablating pulse-energy density;  
8 and  
9 scanning the beam with a power-driven scanner over a scanned area on the work-  
10 piece at least 25 times larger than the spot area of the beam at the surface  
11 of the work-piece ~~beam-area.~~

1 12. (Currently Amended) The method of claim 11, wherein the ablation laser-machining  
2 is part of a surgical procedure.

1 13. (Currently Amended) The method of claim 11, wherein the ablation laser machining  
2 is part of a surgical procedure, and the ablating pulse-energy-density is between 1  
3 and 10 times ~~the~~an ablation threshold of the work-piece.

1 14. (Currently Amended) The method of claim 11, wherein the ablation laser machining  
2 is part of a surgical procedure, and the ablating pulse-energy-density is between 1  
3 and 3 times ~~the~~an ablation threshold of the work-piece.

1 15. (Original) The method of claim 11, wherein the pulses are generated by at least one  
2 optical amplifier.

1 16. (Currently Amended) The method of claim 11, wherein the pulses are generated by  
2 one semiconductor optical amplifier (SOA) and the pulses ~~contain~~ have an energy  
3 of less than about 50 micro-Joules per pulse.

1 17. (Currently Amended) The method of claim 11, wherein the pulses are generated by  
2 one fiber amplifier and the pulses ~~contain~~ have an energy of less than 10 micro-  
3 Joules per pulse.

1 18. (Original) The method of claim 11, wherein the beam is rasterized.

1 19. (New) A system comprising:  
2 a semi-conductor chip laser diode configured for generating pulses at a repetition  
3 rate between 0.1 and 50 MHz;  
4 a semiconductor optical amplifier for amplifying the pulses, to generate amplified  
5 pulses;  
6 a dispersive element configured for compressing the amplified pulses; and  
7 a scanning element configured for scanning a beam of the amplified pulses to  
8 ablate a scanned area at least 25 times larger than spot area of the beam at  
9 the surface of the work-piece.

1 20. (New) The system of claim 19 further comprising a cauterizing laser.